GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD, GUJARAT
COURSE CURRICULUM

Course Title: Basic of Textile
(Code: 3312901)

Diploma Programmes in which this course is offered	Semester in which offered
Textile Manufacturing Technology	**First Semester**

1. RATIONALE

This subject provides overview of textile manufacturing, The knowledge and skills of manufacturing process starts from the raw materials as fibres, their classification, physical and chemical properties, production and process of silk and wool fibres to fabric. For cotton fabric, the process of production starts from cotton Ginning process to collect cotton tufts from fields and cleaning. From Ginning to Spinning to form yarns. The knowledge of yarn numbering system is also essential for production of fabric for various purposes. And finally to Weaving process to acquire the desired Fabric.

2. LIST OF COMPETENCIES

The course content should be taught and implemented with the aim to achieve different types of skills leading to achieve following competency:

i. **Apply textile manufacturing technology concepts, principles and processes- yarn spinning, and weaving to get the desired fabric.**

3. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				
				Theory Marks		Practical Marks		Total Marks
L	**T**	**P**	**C**	**ESE**	**PA**	**ESE**	**PA**	
4	0	0	4	70	30	0	0	**100**

Legends: L-Lecture; **T** – Tutorial/Teacher Guided Theory Practice; **P** -Practical; **C** – Credit;
ESE -End Semester Examination; **PA** - Progressive Assessment.

4. DETAILED COURSE CONTENTS

Unit	Major Learning Outcomes	Topics and Sub-topics
Unit – I Classification of fibres	1.1 Identify the fibres 1.2 Explain textile fibres properties	• Classification of textile fibers • Physical and chemical properties of Textile fibers • Microscopic view of Textile fibers • Identification of Textile fibers • Specific process for silk and wool fibers.
Unit– II Basic terminology of textile	2.1 Identify the package	• Basic terminology of textile terms • Various package used in industry.
Unit– III Ginning process	3.1 Describe ginning process, 3.2 Describe principle and construction of cotton ginning equipment.	• Overview of Ginning process • Object, principle and construction of ginning m/cs. • Importance of pre ginning and post ginning treatment.
Unit– IV Spinning process.	4.1 Describe spinning process 4.2 Describe B**low room** 4.3 Describe Carding machine 4.4 Describe Draw Frames 4.5 Describe Combing m/cs. 4.6 Describe Speed frames. 4.7 Describe Ring Frames.	• Outline of spinning process. • Objects of blow room, brief study of blow room • Objects and passage of material through card • Objects and passage of material through draw frame • Objects and passage of material through comber • Objects and passage of material through speed frame • Objects and passage of material through ring frame
Unit– V Weaving process	5.1 Describe weaving process 5.2 Describe Winding m/cs. 5.3 Describe Warping m/cs. 5.4 Describe Sizing m/cs. 5.5 Describe Plain looms.	• Outline of modern weaving process • Objects and passage of material through winding m/cs • Objects and passage of material through warping m/c • Objects and passage of material through sizing m/c • Objects and passage of material through plain loom
Unit– VI Yarn numbering (Count) system	6.1 Describe Yarn number. 6.2 Calculate Yarn Count.	• Yarn numbering (Count) system • Direct and indirect system • English and metric system • Tax and denier system.

5. SUGGESTED SPECIFICATION TABLE WITH HOURS & MARKS (THEORY)

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks (Duration – 2.5 Hours)			
			R Level	U Level	A Level	Total
1.	Classification of fibres	12	04	06	04	18
2.	Basic terminology of textile	05	06			06
3.	Ginning process	06	04	04	00	08
4.	Spinning process.	12	04	08	00	12
5.	Weaving process	12	04	08	00	12
6.	Yarn numbering (Count) system	09	02	06	06	14
Total		56	24	32	10	**70**

Legends:
R = Remembrance; U= Understanding; A= Application and above levels (Revised Bloom's taxomonoy)

6. SUGGESTED LIST OF EXPERIMENTS/PRACTICAL Not applicable

7. SUGGESTED LIST OF PROPOSED STUDENT ACTIVITIES

Following is the list of proposed activities like: course/topic based seminars, internet based assignments, teacher guided self learning activities,

1. Collection of various Textile fibres.
2. Visit to Ginning mill , and preparing report with sketches
3. Visit to Spinning unit, and preparing report with sketches.
4. Visit to weaving unit, and preparing report with sketches.

8. SUGGESTED LEARNING RESOURCES

A. List of Books

S.No.	Author	Title of Books	Publication
1	ATA	Textile fibre	ATA
2	ATA	Weaving process	ATA
3	ATA	Spinning process	ATA

B. List of Major Equipment/ Instrument

1. Length and weight measuring equipment for fibres
2. Textile laboratory – Blow room, card, Draw frame, Speed Frame, Ring Frames. And Power looms at least for practice.

C. LIST OF SOFTWARE/LEARNING WEBSITES –

Searching engines could be used to locate textile related sites

A. http://www.textileassociationindia.org/
B. http://www.nitma.org/
C. www.sitra.org.in/
D. www.itamma.org/
E. http://www.ittaindia.org/
F. http://www.cottonsjourney.com/Storyofcotton/page5.asp
G. http://textiletechinfo.com/spinning/BLOWROOM.htm
H. http://en.wikipedia.org/wiki/Weaving
I. http://textilelearner.blogspot.in/

9. COURSE CURRICULUM DEVELOPMENT COMMITTEE

Faculty Members from Polytechnics

- **Prof. V N Soni,** HOD Textile Manufacturing, R C technical Institute, Ahmedabad
- **Shri R T Patel,** Lecturer in Textile Manufacturing, R C technical Institute, Ahmedabad
- **Shri B B Bhatt,** Lecturer in Textile Manufacturing, R C technical Institute, Ahmedabad

Co-ordinator and Faculty Member from NITTTR Bhopal

- **Dr. C. K. Chugh**, NITTTR, Bhopal, Professor and Head Dept. of Electronic Media, NITTTR, Bhopal